SEQUENCE LISTING

<110> KYOWA HAKKO KOGYO CO., LTD

<120> An agent for prevention and/or treatment of itching

<130> 11503W01

<140>
<141>

<150> JP 2002/241522
<151> 2002-08-22

<160> 20

<170> PatentIn Ver. 2.1

<210> 1
<211> 54
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic DNA

<400> 1
tcgacaaata aagcaatagc atcacaaatt tcacaaataa agcatttttt tcaa 54

<210> 2
<211> 54

<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic DNA

<400> 2
tgcattgaaa aaaatgcttt atttgtgaaa tttgtgatgc tattgcttta tttg 54

<210> 3
<211> 39
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic DNA

<400> 3
tgcattctag ttgtggtttg tccaaactcg agcccgggg 39

<210> 4
<211> 39
<212> DNA
<213> Artificial Sequence

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<223> Description of Artificial Sequence: synthetic DNA

<400> 4
gtacccccgg gctcgagttt ggacaaacca caactagaa 39

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<212> DNA

<213> Artificial Sequence

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<223> Description of Artificial Sequence: synthetic DNA

<400> 5
tcgacggtat cgattcgact gacgtcatac ttgacgtcac 40

<210> 6
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<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic DNA

<400> 6
tcgagtgacg tcaagtatga cgtcagtcga atcgataccg 40

<210> 7
<211> 29
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic DNA

<400> 7
gccccagaag cttaagtgcc caccatggg 29

<210> 8
<211> 33
<212> DNA

<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic DNA

<400> 8
gttcattgtg gcggccgcag catcttcagc tgc 33

<210> 9
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic DNA

<400> 9
cggagactct agagggtata taatg 25

<210> 10
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic DNA

<400> 10
ctaatacgac tcactatagg g 21

<210> 11
<211> 362

<212> PRT
<213> Homo sapiens

<400> 11

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Met Gly Asn His Thr Trp Glu Gly Cys His Val Asp Ser Arg Val Asp
 1               5                  10                  15

His Leu Phe Pro Pro Ser Leu Tyr Ile Phe Val Ile Gly Val Gly Leu
            20                  25                  30

Pro Thr Asn Cys Leu Ala Leu Trp Ala Ala Tyr Arg Gln Val Gln Gln
        35                  40                  45

Arg Asn Glu Leu Gly Val Tyr Leu Met Asn Leu Ser Ile Ala Asp Leu
    50                  55                  60

Leu Tyr Ile Cys Thr Leu Pro Leu Trp Val Asp Tyr Phe Leu His His
65                  70                  75                  80

Asp Asn Trp Ile His Gly Pro Gly Ser Cys Lys Leu Phe Gly Phe Ile
                85                  90                  95

Phe Tyr Thr Asn Ile Tyr Ile Ser Ile Ala Phe Leu Cys Cys Ile Ser
            100                 105                 110

Val Asp Arg Tyr Leu Ala Val Ala His Pro Leu Arg Phe Ala Arg Leu
        115                 120                 125

Arg Arg Val Lys Thr Ala Val Ala Val Ser Ser Val Val Trp Ala Thr
    130                 135                 140

Glu Leu Gly Ala Asn Ser Ala Pro Leu Phe His Asp Glu Leu Phe Arg
145                 150                 155                 160

Asp Arg Tyr Asn His Thr Phe Cys Phe Glu Lys Phe Pro Met Glu Gly
                165                 170                 175
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Trp Val Ala Trp Met Asn Leu Tyr Arg Val Phe Val Gly Phe Leu Phe
180 185 190

Pro Trp Ala Leu Met Leu Leu Ser Tyr Arg Gly Ile Leu Arg Ala Val
195 200 205

Arg Gly Ser Val Ser Thr Glu Arg Gln Glu Lys Ala Lys Ile Lys Arg
210 215 220

Leu Ala Leu Ser Leu Ile Ala Ile Val Leu Val Cys Phe Ala Pro Tyr
225 230 235 240

His Val Leu Leu Leu Ser Arg Ser Ala Ile Tyr Leu Gly Arg Pro Trp
245 250 255

Asp Cys Gly Phe Glu Glu Arg Val Phe Ser Ala Tyr His Ser Ser Leu
260 265 270

Ala Phe Thr Ser Leu Asn Cys Val Ala Asp Pro Ile Leu Tyr Cys Leu
275 280 285

Val Asn Glu Gly Ala Arg Ser Asp Val Ala Lys Ala Leu His Asn Leu
290 295 300

Leu Arg Phe Leu Ala Ser Asp Lys Pro Gln Glu Met Ala Asn Ala Ser
305 310 315 320

Leu Thr Leu Glu Thr Pro Leu Thr Ser Lys Arg Asn Ser Thr Ala Lys
325 330 335

Ala Met Thr Gly Ser Trp Ala Ala Thr Pro Pro Ser Gln Gly Asp Gln
340 345 350

Val Gln Leu Lys Met Leu Pro Pro Ala Gln
355 360

<210> 12
<211> 2932
<212> DNA
<213> Homo sapiens

<400> 12
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agaccttact cacctccttc ctgtttccta agactccttc ctgccgtcca cagaccgagc 180
cttttatctt tgtccaccct gtgccagaca cctccttttc cagaaccttc tccttactgg 240
tgaccttact tatctctgtt gctttctggg gtcctaggaa atgccagcac tcccacccac 300
attgcctgaa ctttccaaca ctccctagct gcgctgtgtc ctatctcaac acttcctcat 360
gtatttcttg tgtcttctag aacattcccc cgccattatt acttcaatat ggctacacat 420
acttcctaat tgccctgcaa accatctcct tctcaccatt gcccagcgat gctttcgtct 480
cctccataaa cactcccgga gaccaatttt tgtgtcaccc ccatactccc tcgttgacac 540
actgactcca tacataacct ccttgaaaaa cctctttatt aatctcacca tcctccagac 600
ttccctcctg tcataattcc atccctcctc caacttttcc ctctcaagct ctgcccttcc 660
cagcccagcc cagcctaccc aacctcatct cttccctgta gaccacatcc caccatgttc 720
ccctgagcct ccaaggaagg ggctcagggg gccccatggc ctcccgctcc ctgtggcccc 780
acagcccccg tgggccaggg gaagcgcccc agaagccgaa gtgcccacc atg ggc aac 838
Met Gly Asn
1

cac acg tgg gag ggc tgc cac gtg gac tcg cgc gtg gac cac ctc ttt 886
His Thr Trp Glu Gly Cys His Val Asp Ser Arg Val Asp His Leu Phe
5 10 15

ccg cca tcc ctc tac atc ttt gtc atc ggc gtg ggg ctg ccc acc aac 934
Pro Pro Ser Leu Tyr Ile Phe Val Ile Gly Val Gly Leu Pro Thr Asn
20 25 30 35

tgc ctg gct ctg tgg gcg gcc tac cgc cag gtg caa cag cgc aac gag 982
Cys Leu Ala Leu Trp Ala Ala Tyr Arg Gln Val Gln Gln Arg Asn Glu
40 45 50

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ctg ggc gtc tac ctg atg aac ctc agc atc gcc gac ctg ctg tac atc   1030
Leu Gly Val Tyr Leu Met Asn Leu Ser Ile Ala Asp Leu Leu Tyr Ile
            55                  60                  65

tgc acg ctg ccg ctg tgg gtg gac tac ttc ctg cac cac gac aac tgg   1078
Cys Thr Leu Pro Leu Trp Val Asp Tyr Phe Leu His His Asp Asn Trp
        70                  75                  80

atc cac ggc ccc ggg tcc tgc aag ctc ttt ggg ttc atc ttc tac acc   1126
Ile His Gly Pro Gly Ser Cys Lys Leu Phe Gly Phe Ile Phe Tyr Thr
    85                  90                  95

aat atc tac atc agc atc gcc ttc ctg tgc tgc atc tcg gtg gac cgc   1174
Asn Ile Tyr Ile Ser Ile Ala Phe Leu Cys Cys Ile Ser Val Asp Arg
100                 105                 110                 115

tac ctg gct gtg gcc cac cca ctc cgc ttc gcc cgc ctg cgc cgc gtc   1222
Tyr Leu Ala Val Ala His Pro Leu Arg Phe Ala Arg Leu Arg Arg Val
                120                 125                 130

aag acc gcc gtg gcc gtg agc tcc gtg gtc tgg gcc acg gag ctg ggc   1270
Lys Thr Ala Val Ala Val Ser Ser Val Val Trp Ala Thr Glu Leu Gly
            135                 140                 145

gcc aac tcg gcg ccc ctg ttc cat gac gag ctc ttc cga gac cgc tac   1318
Ala Asn Ser Ala Pro Leu Phe His Asp Glu Leu Phe Arg Asp Arg Tyr
        150                 155                 160

aac cac acc ttc tgc ttt gag aag ttc ccc atg gaa ggc tgg gtg gcc   1366
Asn His Thr Phe Cys Phe Glu Lys Phe Pro Met Glu Gly Trp Val Ala
    165                 170                 175

tgg atg aac ctc tat cgg gtg ttc gtg ggc ttc ctc ttc ccg tgg gcg   1414
Trp Met Asn Leu Tyr Arg Val Phe Val Gly Phe Leu Phe Pro Trp Ala
180                 185                 190                 195
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ctc atg ctg ctg tcg tac cgg ggc atc ctg cgg gcc gtg cgg ggc agc    1462
Leu Met Leu Leu Ser Tyr Arg Gly Ile Leu Arg Ala Val Arg Gly Ser
                200                 205                 210

gtg tcc acc gag cgc cag gag aag gcc aag atc aag cgg ctg gcc ctc    1510
Val Ser Thr Glu Arg Gln Glu Lys Ala Lys Ile Lys Arg Leu Ala Leu
            215                 220                 225

agc ctc atc gcc atc gtg ctg gtc tgc ttt gcg ccc tat cac gtg ctc    1558
Ser Leu Ile Ala Ile Val Leu Val Cys Phe Ala Pro Tyr His Val Leu
        230                 235                 240

ttg ctg tcc cgc agc gcc atc tac ctg ggc cgc ccc tgg gac tgc ggc    1606
Leu Leu Ser Arg Ser Ala Ile Tyr Leu Gly Arg Pro Trp Asp Cys Gly
    245                 250                 255

ttc gag gag cgc gtc ttt tct gca tac cac agc tca ctg gct ttc acc    1654
Phe Glu Glu Arg Val Phe Ser Ala Tyr His Ser Ser Leu Ala Phe Thr
260                 265                 270                 275

agc ctc aac tgt gtg gcg gac ccc atc ctc tac tgc ctg gtc aac gag    1702
Ser Leu Asn Cys Val Ala Asp Pro Ile Leu Tyr Cys Leu Val Asn Glu
                280                 285                 290

ggc gcc cgc agc gat gtg gcc aag gcc ctg cac aac ctg ctc cgc ttt    1750
Gly Ala Arg Ser Asp Val Ala Lys Ala Leu His Asn Leu Leu Arg Phe
            295                 300                 305

ctg gcc agc gac aag ccc cag gag atg gcc aat gcc tcg ctc acc ctg    1798
Leu Ala Ser Asp Lys Pro Gln Glu Met Ala Asn Ala Ser Leu Thr Leu
        310                 315                 320

gag acc cca ctc acc tcc aag agg aac agc aca gcc aaa gcc atg act    1846
Glu Thr Pro Leu Thr Ser Lys Arg Asn Ser Thr Ala Lys Ala Met Thr
    325                 330                 335
```

ggc agc tgg gcg gcc act ccg ccc tcc cag ggg gac cag gtg cag ctg 1894
Gly Ser Trp Ala Ala Thr Pro Pro Ser Gln Gly Asp Gln Val Gln Leu
340 345 350 355

aag atg ctg ccg cca gca caa tga accccgagtg gcacagaatc cccagttttc 1948
Lys Met Leu Pro Pro Ala Gln
360

ccctctcatc ccacagtccc ttctctcctg gtctggtgta tgcaaattgt atggaaaaag 2008
ggctgtgtta atattcataa gaatacaaga acttaggaag agtgaggttg gtgtgtcact 2068
ggtcaacctt tgtgctccca gatcccatca cagtttggcg attgtggagg gcctcctgaa 2128
ggaggagatg agtaaatata ttttttttgga gacagggtct cactgtgttg cccaggctgg 2188
agtgcagtag tgcagtcgtg gctcactgca gcctccacct cctgggctct ccagcgatct 2248
tcccacatca gcctcccgag tagctgggac cacaaatgtg agcccaccca tgcctggcta 2308
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aggccaggga acataagacc gcaattctaa gtttctagat aaacagcgat ctccaagtca 2668
agactgagga tgaagaggga gaatgtcaga actcaagtga agggcaatca gggcagactg 2728
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tattcattca ttcaacagag gtttatgtag ggcactgtgc tgggtggggc tggggacaca 2848
acaatgactg aggcagcctg gccttgcctt cacagggctc accatacaca agtaaataaa 2908
aaatatgtaa tgtttggaat tgct 2932

<210> 13
<211> 365
<212> PRT
<213> Mus musculus

<400> 13
Met Asp Asn Ser Thr Gly Thr Gly Glu Gly Cys His Val Asp Ser Arg
1 5 10 15

Val Asp His Leu Phe Pro Pro Ser Leu Tyr Ile Phe Val Ile Gly Val
20 25 30

Gly Leu Pro Thr Asn Cys Leu Ala Leu Trp Ala Ala Tyr Arg Gln Val
35 40 45

Arg Gln His Asn Glu Leu Gly Val Tyr Leu Met Asn Leu Ser Ile Ala
50 55 60

Asp Leu Leu Tyr Ile Cys Thr Leu Pro Leu Trp Val Asp Tyr Phe Leu
65 70 75 80

His His Asp Asn Trp Ile His Gly Pro Gly Ser Cys Lys Leu Phe Gly
85 90 95

Phe Ile Phe Tyr Ser Asn Ile Tyr Ile Ser Ile Ala Phe Leu Cys Cys
100 105 110

Ile Ser Val Asp Arg Tyr Leu Ala Val Ala His Pro Leu Arg Phe Ala
115 120 125

Arg Leu Arg Arg Val Lys Thr Ala Val Ala Val Ser Ser Val Val Trp
130 135 140

Ala Thr Glu Leu Gly Ala Asn Ser Ala Pro Leu Phe His Asp Glu Leu
145 150 155 160

Phe Arg Asp Arg Tyr Asn His Thr Phe Cys Phe Glu Lys Phe Pro Met
165 170 175

Glu Arg Trp Val Ala Trp Met Asn Leu Tyr Arg Val Phe Val Gly Phe
180 185 190

Leu Phe Pro Trp Ala Leu Met Leu Leu Cys Tyr Arg Gly Ile Leu Arg
195 200 205

```
Ala Val Gln Ser Ser Val Ser Thr Glu Arg Gln Glu Lys Val Lys Ile
    210                 215                 220

Lys Arg Leu Ala Leu Ser Leu Ile Ala Ile Val Leu Val Cys Phe Ala
225                 230                 235                 240

Pro Tyr His Ala Leu Leu Leu Ser Arg Ser Ala Val Tyr Leu Gly Arg
                245                 250                 255

Pro Trp Asp Cys Gly Phe Glu Glu Arg Val Phe Ser Ala Tyr His Ser
            260                 265                 270

Ser Leu Ala Phe Thr Ser Leu Asn Cys Val Ala Asp Pro Ile Leu Tyr
        275                 280                 285

Cys Leu Val Asn Glu Gly Ala Arg Ser Asp Val Ala Lys Ala Leu His
    290                 295                 300

Asn Leu Leu Arg Phe Leu Ala Ser Asn Lys Pro Gln Glu Met Ala Asn
305                 310                 315                 320

Ala Ser Leu Thr Leu Glu Thr Pro Leu Thr Ser Lys Arg Ser Thr Thr
                325                 330                 335

Gly Lys Ser Ser Gly Ala Val Trp Ala Val Pro Pro Thr Ala Gln Gly
            340                 345                 350

Asp Gln Val Pro Leu Lys Val Leu Leu Pro Pro Ala Gln
        355                 360                 365
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<210> 14
<211> 1098
<212> DNA
<213> Mus musculus

<400> 14

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atg gac aac agc acg ggc aca ggg gag ggc tgc cat gtg gac tct cga   48
Met Asp Asn Ser Thr Gly Thr Gly Glu Gly Cys His Val Asp Ser Arg
 1               5                  10                  15

gtg gac cac ctc ttc cca cca tct ctc tac atc ttc gtc atc ggg gtg   96
Val Asp His Leu Phe Pro Pro Ser Leu Tyr Ile Phe Val Ile Gly Val
            20                  25                  30

ggg ctg ccc acc aac tgc ctg gcc ctg tgg gca gcc tac cgg cag gtg   144
Gly Leu Pro Thr Asn Cys Leu Ala Leu Trp Ala Ala Tyr Arg Gln Val
        35                  40                  45

cgc caa cac aat gag ctg ggc gtc tac ctg atg aac ttg agc att gca   192
Arg Gln His Asn Glu Leu Gly Val Tyr Leu Met Asn Leu Ser Ile Ala
    50                  55                  60

gac ctg ctg tac atc tgc act ttg ccg ctg tgg gtc gac tac ttc ctc   240
Asp Leu Leu Tyr Ile Cys Thr Leu Pro Leu Trp Val Asp Tyr Phe Leu
65                  70                  75                  80

cac cat gac aac tgg atc cac ggc cct ggc tcc tgc aag ctc ttt ggc   288
His His Asp Asn Trp Ile His Gly Pro Gly Ser Cys Lys Leu Phe Gly
                85                  90                  95

ttc atc ttc tac agc aac atc tat atc agc atc gcc ttc ctg tgc tgc   336
Phe Ile Phe Tyr Ser Asn Ile Tyr Ile Ser Ile Ala Phe Leu Cys Cys
            100                 105                 110

atc tcc gtg gac cgc tac ctg gct gtg gct cat cct ctg cgc ttt gca   384
Ile Ser Val Asp Arg Tyr Leu Ala Val Ala His Pro Leu Arg Phe Ala
        115                 120                 125

cgc ctg cgc cgg gtc aag aca gca gtg gct gtg agc tct gtg gtc tgg   432
Arg Leu Arg Arg Val Lys Thr Ala Val Ala Val Ser Ser Val Val Trp
```

```
    130                 135                 140

gcc acg gag ctg ggc gcc aat tca gca ccg ctc ttc cat gat gag ctg   480
Ala Thr Glu Leu Gly Ala Asn Ser Ala Pro Leu Phe His Asp Glu Leu
145                 150                 155                 160

ttt cgt gat cgc tac aac cac acc ttc tgc ttt gag aag ttc ccc atg   528
Phe Arg Asp Arg Tyr Asn His Thr Phe Cys Phe Glu Lys Phe Pro Met
                165                 170                 175

gag cgt tgg gtg gcc tgg atg aat ctg tac cgc gtc ttt gtg ggc ttc   576
Glu Arg Trp Val Ala Trp Met Asn Leu Tyr Arg Val Phe Val Gly Phe
            180                 185                 190

ctc ttc ccc tgg gca ctc atg ttg ctg tgc tac cgt ggc atc ctg agg   624
Leu Phe Pro Trp Ala Leu Met Leu Leu Cys Tyr Arg Gly Ile Leu Arg
        195                 200                 205

gca gtg cag agc agt gtg tcc acc gag cgc cag gag aaa gtc aag atc   672
Ala Val Gln Ser Ser Val Ser Thr Glu Arg Gln Glu Lys Val Lys Ile
    210                 215                 220

aaa cgt ctg gcc ctg agc ctc atc gcc att gtg ctg gtg tgc ttt gcg   720
Lys Arg Leu Ala Leu Ser Leu Ile Ala Ile Val Leu Val Cys Phe Ala
225                 230                 235                 240

cct tac cat gct ctc ctg ctg tct cgc agc gcc gtc tac ctg ggc cgg   768
Pro Tyr His Ala Leu Leu Leu Ser Arg Ser Ala Val Tyr Leu Gly Arg
                245                 250                 255

ccc tgg gac tgt ggc ttc gag gag cga gtc ttt tct gcc tac cac agc   816
Pro Trp Asp Cys Gly Phe Glu Glu Arg Val Phe Ser Ala Tyr His Ser
            260                 265                 270

tcc ctg gcc ttc acc agc ctc aat tgt gtg gct gac ccc atc ctc tac   864
Ser Leu Ala Phe Thr Ser Leu Asn Cys Val Ala Asp Pro Ile Leu Tyr
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275 280 285

tgc ctg gtc aac gag ggt gcc cgc agt gat gtg gcc aag gcc ctg cac 912
Cys Leu Val Asn Glu Gly Ala Arg Ser Asp Val Ala Lys Ala Leu His
290 295 300

aac ctc ctc cgc ttc ctg gcc agc aac aag ccc cag gag atg gcc aat 960
Asn Leu Leu Arg Phe Leu Ala Ser Asn Lys Pro Gln Glu Met Ala Asn
305 310 315 320

gct tcc ctc acc ctg gag aca ccc ttg acc tcc aag agg agc acc acc 1008
Ala Ser Leu Thr Leu Glu Thr Pro Leu Thr Ser Lys Arg Ser Thr Thr
325 330 335

ggc aag tcg tcc ggg gct gtc tgg gca gtg cct ccg act gcc cag ggg 1056
Gly Lys Ser Ser Gly Ala Val Trp Ala Val Pro Pro Thr Ala Gln Gly
340 345 350

gac cag gtg cca ctg aag gtg ctg ctg ccc ccg gca cag tga 1098
Asp Gln Val Pro Leu Lys Val Leu Leu Pro Pro Ala Gln
355 360 365

<210> 15
<211> 36
<212> DNA
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence: synthetic DNA

<400> 15
ataagcttgccaccatggacaacagcacgggcac 36

<210> 16
<211> 33

<212> DNA
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence: synthetic DNA

<400> 16
tagcggccgctcactgtgccgggggcagcag 33

<210> 17
<211> 365
<212> PRT
<213> Rattus norvegicus

<400> 17
Met Asp Asn Ser Thr Gly Thr Trp Glu Gly Cys His Val Asp Ser Arg
1 5 10 15

Val Asp His Leu Phe Pro Pro Ser Leu Tyr Ile Phe Val Ile Gly Val
20 25 30

Gly Leu Pro Thr Asn Cys Leu Ala Leu Trp Ala Ala Tyr Arg Gln Val
35 40 45

Arg Gln Arg Asn Glu Leu Gly Val Tyr Leu Met Asn Leu Ser Ile Ala
50 55 60

Asp Leu Leu Tyr Ile Cys Thr Leu Pro Leu Trp Val Asp Tyr Phe Leu
65 70 75 80

His His Asp Asn Trp Ile His Gly Pro Gly Ser Cys Lys Leu Phe Gly
85 90 95

Phe Ile Phe Tyr Ser Asn Ile Tyr Ile Ser Ile Ala Phe Leu Cys Cys
100 105 110

Ile Ser Val Asp Arg Tyr Leu Ala Val Ala His Pro Leu Arg Phe Ala
115 120 125

Arg Leu Arg Arg Val Lys Thr Ala Val Ala Val Ser Ser Val Val Trp
130 135 140

Ala Thr Glu Leu Gly Ala Asn Ser Ala Pro Leu Phe His Asp Glu Leu
145 150 155 160

Phe Arg Asp Arg Tyr Asn His Thr Phe Cys Phe Glu Lys Phe Pro Met
165 170 175

Glu Arg Trp Val Ala Trp Met Asn Leu Tyr Arg Val Phe Val Gly Phe
180 185 190

Leu Phe Pro Trp Ala Leu Met Leu Leu Cys Tyr Arg Gly Ile Leu Arg
195 200 205

Ala Val Gln Ser Ser Val Ser Thr Glu Arg Gln Glu Lys Val Lys Ile
210 215 220

Lys Arg Leu Ala Leu Ser Leu Ile Ala Ile Val Leu Val Cys Phe Ala
225 230 235 240

Pro Tyr His Ala Leu Leu Leu Ser Arg Ser Ala Val Tyr Leu Gly Arg
245 250 255

Pro Trp Asp Cys Gly Phe Glu Glu Arg Val Phe Ser Ala Tyr His Ser
260 265 270

Ser Leu Ala Phe Thr Ser Leu Asn Cys Val Ala Asp Pro Ile Leu Tyr
275 280 285

Cys Leu Val Asn Glu Gly Ala Arg Ser Asp Val Ala Lys Ala Leu His
290 295 300

```
Asn Leu Leu Arg Phe Leu Ala Ser Asn Lys Pro Gln Glu Met Ala Asn
305                 310                 315                 320

Ala Ser Leu Thr Leu Glu Thr Pro Leu Thr Ser Lys Arg Ser Thr Thr
                325                 330                 335

Gly Lys Thr Ser Gly Ala Val Trp Ala Val Pro Pro Thr Ala Gln Gly
            340                 345                 350

Asp Gln Val Pro Leu Lys Val Leu Leu Pro Pro Ala Gln
        355                 360                 365
```

<210> 18
<211> 1098
<212> DNA
<213> Rattus norvegicus

<400> 18

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atg gac aac agc acg ggc acg tgg gag ggc tgc cat gtg gac tct cga      48
Met Asp Asn Ser Thr Gly Thr Trp Glu Gly Cys His Val Asp Ser Arg
 1               5                  10                  15

gtg gac cac ctc ttc cca cca tcc ctc tac atc ttc gtc atc ggg gtg      96
Val Asp His Leu Phe Pro Pro Ser Leu Tyr Ile Phe Val Ile Gly Val
            20                  25                  30

ggg ctg ccc acc aac tgc ctg gcc ctg tgg gca gcc tac cgc cag gtg     144
Gly Leu Pro Thr Asn Cys Leu Ala Leu Trp Ala Ala Tyr Arg Gln Val
        35                  40                  45

cgc cag cgc aat gag ctg ggc gtc tac ctg atg aac ttg agc atc gca     192
Arg Gln Arg Asn Glu Leu Gly Val Tyr Leu Met Asn Leu Ser Ile Ala
    50                  55                  60

gac ctg ctg tac atc tgt acg ctg ccg ctg tgg gtc gac tac ttc ctc     240
```

```
Asp Leu Leu Tyr Ile Cys Thr Leu Pro Leu Trp Val Asp Tyr Phe Leu
 65                  70                  75                  80

cac cat gac aac tgg atc cac ggc ccc ggc tcc tgc aag ctc ttt ggc  288
His His Asp Asn Trp Ile His Gly Pro Gly Ser Cys Lys Leu Phe Gly
                85                  90                  95

ttc atc ttc tac agc aac atc tac atc agc atc gcc ttc ctg tgc tgc  336
Phe Ile Phe Tyr Ser Asn Ile Tyr Ile Ser Ile Ala Phe Leu Cys Cys
           100                 105                 110

atc tcc gtg gac cgc tac ctg gct gtg gcc cat ccg ctg cgc ttt gcg  384
Ile Ser Val Asp Arg Tyr Leu Ala Val Ala His Pro Leu Arg Phe Ala
       115                 120                 125

cgc ctg cgc cgg gtc aag aca gca gta gct gtg agc tcc gtg gtc tgg  432
Arg Leu Arg Arg Val Lys Thr Ala Val Ala Val Ser Ser Val Val Trp
   130                 135                 140

gcc acc gag cta ggc gcc aac tcg gca ccg ctc ttt cat gac gag ctc  480
Ala Thr Glu Leu Gly Ala Asn Ser Ala Pro Leu Phe His Asp Glu Leu
145                 150                 155                 160

ttt cgt gat cgc tac aac cac acc ttc tgc ttc gag aag ttc ccc atg  528
Phe Arg Asp Arg Tyr Asn His Thr Phe Cys Phe Glu Lys Phe Pro Met
                165                 170                 175

gag cgc tgg gtg gcc tgg atg aac ctg tac cgc gtc ttt gtg ggg ttc  576
Glu Arg Trp Val Ala Trp Met Asn Leu Tyr Arg Val Phe Val Gly Phe
           180                 185                 190

ctc ttc ccc tgg gca ctc atg ttg ctg tgc tac cgc ggc atc ctg cgg  624
Leu Phe Pro Trp Ala Leu Met Leu Leu Cys Tyr Arg Gly Ile Leu Arg
       195                 200                 205

gcc gta cag agc agt gtg tcc acc gag cgc cag gag aaa gtc aag atc  672
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```
Ala Val Gln Ser Ser Val Ser Thr Glu Arg Gln Glu Lys Val Lys Ile
    210                 215                 220

aaa cgc ctg gcc ctg agc ctc atc gcc atc gtg ctg gtg tgc ttt gca     720
Lys Arg Leu Ala Leu Ser Leu Ile Ala Ile Val Leu Val Cys Phe Ala
225                 230                 235                 240

ccc tac cat gct ctc ttg ctg tct cgc agc gct gtc tat ctg ggc cgg     768
Pro Tyr His Ala Leu Leu Leu Ser Arg Ser Ala Val Tyr Leu Gly Arg
                245                 250                 255

ccc tgg gac tgt ggc ttc gag gag cga gtc ttc tct gcc tac cac agc     816
Pro Trp Asp Cys Gly Phe Glu Glu Arg Val Phe Ser Ala Tyr His Ser
            260                 265                 270

tcc cta gcc ttc acc agc ctc aat tgc gtg gct gac ccc atc ctc tac     864
Ser Leu Ala Phe Thr Ser Leu Asn Cys Val Ala Asp Pro Ile Leu Tyr
        275                 280                 285

tgc ctg gtc aac gag ggt gcc cgt agt gac gtg gcc aaa gcc ctg cac     912
Cys Leu Val Asn Glu Gly Ala Arg Ser Asp Val Ala Lys Ala Leu His
    290                 295                 300

aac ctc ctc cgc ttc ctg gcc agc aac aag ccc cag gag atg gcc aat     960
Asn Leu Leu Arg Phe Leu Ala Ser Asn Lys Pro Gln Glu Met Ala Asn
305                 310                 315                 320

gct tcc ctc acc ctg gag aca cca ttg acc tcc aag agg agc acc acc    1008
Ala Ser Leu Thr Leu Glu Thr Pro Leu Thr Ser Lys Arg Ser Thr Thr
                325                 330                 335

ggc aaa acg tct ggg gct gtc tgg gca gtg cct ccc act gcc cag ggg    1056
Gly Lys Thr Ser Gly Ala Val Trp Ala Val Pro Pro Thr Ala Gln Gly
            340                 345                 350

gac cag gtg cca ctg aag gtg ctg ctg ccc ccg gca cag tga             1098
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Asp Gln Val Pro Leu Lys Val Leu Leu Pro Pro Ala Gln
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